

Application No. 10/535,125
Amendment dated August 11, 2010
Reply to Office Action of May 11, 2010
Attorney Docket No. 18062

REMARKS

Claims 1 – 15 and 17 – 20 were pending for examination. Claims 1, 6 and 20 have been amended. Favorable reconsideration and allowance of this application is respectfully requested in light of the amendment and the foregoing remarks. No new matter has been added.

Indication of Allowable Subject Matter

Applicant wishes to thank the Examiner for indication that claim 20 would be allowable if rewritten in independent form, which has been done.

Rejection of Claims under 35 U.S.C. §103

Claims 1-11 and 17-19 were rejected under the provisions of 35 U.S.C. §103 as obvious by German Patent DE 2161456 to Faun-Werke in view of US Patent 3,904,042 to Colston and US Patent Publication 2003/0013575 to Sprinkle.

Neither Faun-Werke, Colston or Sprinkle appear to show the recited system, including two connections of a hydraulic pump connected with two chambers of a swiveling vane motor in a first circuit such that a change at the adjusting actuator of the variable flow pump causes an inflow to one of the chambers and an outflow from the other chamber; and that variable flow pump driven by a driving mechanism that powers

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a second hydraulic pump located in a second circuit configured to draw fluid from a reservoir for supplying the second circuit, wherein at least one valve permits the flow of fluid from the second circuit to supply the first circuit.

It further would not be obvious to combine this Faun-Werke with Colston to show the use of a vane motor between ground engaging elements along the center pivot axis of a construction vehicle for steering purposes. Colston shows a robotic arm style manipulator apparatus, having parts interconnected by power operated pivots and rotary joints. The vane pump is operated to manipulate the positioning of the robotic arm. The vane motor is controlled by the valves between the pump and a pressure source. The applications, and particularly the forces and scale related to the components involved are so dissimilar that the two fields of manipulating a robot arm and steering a vehicle are not commonly cross referenced. It would also not be obvious to combine Sprinkle with the previous references as it shows a variable displacement pump used in a hydrostatic transmission used for powering the vehicle in a forward or reverse direction and controlled by a microprocessor connected to a sensor. It does not show the use of a swivel vane motor with the centre-pivot of vehicle for rotating a first ground engaging portion of an articulated vehicle with respect to a second ground engaging articulated vehicle. Absent further teaching in the art, the use of pump in a drive/propulsion application on a vehicle based on feedback received from a controller does not make it obvious to use the same pump to drive a steering motor on a different vehicle.

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As neither reference alone or in combination shows or suggests all of the elements of Applicant's Claim 1, withdrawal of the rejection is respectfully requested. Claims 2-11 and 17-19 depend, either directly or indirectly from Claim 1 and should be allowable for at least the same reasons.

Claims 4 – 5 are separately patentable as they incorporate additional swivel vane motors arranged above or below the centre pivot joint along the rotary axis opposite of the first swivel vane motor. This configuration increases the available steering torque or allows reduction in the size of each of the individual swiveling motors. As the maximum steering torque results from the total volumes of all the motors working together, thus an optimum ratio of size to the possible steering torque is achieved. Faun-Werke, Colston and Sprinkle do not show any vane motor configuration using multiple motors, particularly arranged along the rotary axis of the vehicle in the manner discussed.

Claims 3, 9 and 10 are separately patentable as none of the references show using a sensor and controller to adjust the vane motor for steering purposes. Sprinkle specifically does not use the sensor to control the steering of the vehicle, or more particularly the speed of the pump. Absent further teaching in the art, the use of pump in a drive/propulsion application on a vehicle based on feedback received from a controller does not make it obvious to use to the same pump to drive a steering motor on a different vehicle.

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Claim 19 is further patentable as the swiveling motor is positioned in the joint (integral to the joint), an example of which is shown in Figure 4, such that a connecting section of a first ground engaging portion of a vehicle runs through the swiveling motor and bearing points of the swiveling motor forming a turning bearing between the first and second ground engaging components of the vehicle. Neither Faun-Werke nor Colston or Sprinkle specifically show the swiveling motor forming the joint of a centre-pivot steered vehicle as recited. Faun-Werke as previously discussed does not positively recite the positioning of the vane motor. Colston also does not appear to show this arrangement.

Claims 12 – 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Faun-Werke in view of Colston and Sprinkle as applied to Claim 1, and further in view of US Patent 7,061,466 to Moore.

Claims 12 – 15 depend from Claim 1; they should be allowable for at least the same reasons discussed above.

Conclusion

It is submitted that claims 1-15 and 17-20 define patentable subject matter. A Notice of Allowance is therefore respectfully requested.

No fee is believed due with this communication. Nevertheless, should the Examiner consider any fees to be payable in conjunction with this or any future communication, authorization is given to direct payment of such fees, or credit any

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overpayment to Deposit Account No. 14-0780. The Examiner is invited to contact the undersigned by telephone if it would help expedite matters.

Respectfully submitted,



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